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## In the Claims

Kindly cancel claim 8.

Kindly rewrite independent claim 1 as follows to include all the limitations of allowable claim 8 now canceled:

 (Amended) A system for providing a first signal to a circuit and receiving a second signal from said circuit over an electrical connection, said system comprising:

first means for providing said first signal to said circuit via a first electrical path, said first signal having alternating first and second states;

second means, including a keypad, for generating a second signal; and

third means for receiving said second signal via said first electrical path, said second signal being received during said second state of said first signal.

#### REMARKS

Reconsideration and allowance are respectfully requested in view of the above amendments and the following remarks. Claims 1-7 and 9-56 remain in this application, claim 8 having been canceled.

The indication that claims 7-13 and 15-56 are allowable, or would be allowable if rewritten in independent form, is appreciatively noted.

Allowable claim 8 has been combined with independent claim 1 rendering that claim and all its dependencies allowable. All other claims being indicated as being in allowable form, this application is now believed to be in condition for allowance.

The art grounds of rejection as applied to originally presented claims 1-6 and 14 in view of the cited patent to Kanatani et al. (U.S. Patent 5.414.443) have been obviated by the above amendments to the claims.

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In light of the foregoing, the Examiner's reconsideration of this application with a view toward allowance is respectfully requested. The Examiner is invited to call the undersigned agent if a telephone call could help solve any remaining items.

Respectfully submitted,

Dated: November 20, 2001

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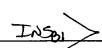
# **CLEAN CLAIMS**

1. A system for providing a first signal to a circuit and receiving a second signal from said circuit over an electrical connection, said system comprising:

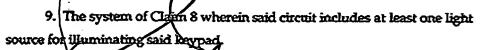
first means for providing said first signal to said circuit via a first electrical path, said first signal having alternating first and second states;

second means, including a keypad, for generating a second signal; and third means for receiving said second signal via said first electrical path, said second signal being received during said second state of said first signal.

- The system of Claim 1 wherein said first and second states are continuously alternating states.
- The system of Claim 1 wherein said first signal provides power to said circuit when said first signal is in said first state.
- 4. The system of Claim 1 wherein said first means further includes means for adjusting a duty cycle and/or frequency of said first signal.
- 5. The system of Claim 4 wherein said first means includes a signal generator.
- 6. The system of Claim 5 wherein said signal generator includes a voltage source, a switching circuit connected to said source and a control circuit connected to said switching circuit, said control circuit effective to cause said switching circuit to output said first signal having first and second states at said duty cycle.
- 7. The system of Claim 6 wherein said switching circuit includes a transistor having a control terminal connected to said control circuit, one terminal connected to said source and one terminal connected to said electrical path.
  - 8. Canceled.



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10. The system of Claims wherein said light source is powered by said first signal churing the first state thereof.

9 11. The system of Claim to wherein said second signal is generated by said keypad during the second state of said first signal.

0 12. The system of Claim II wherein said keypad includes a plurality of resistive elements connected in a resistive ladder network.

| 18. The system of Claim 12 wherein each of said resistive elements correspond to a respective key of said keypad.

\14 The system of Claim 1 further including means for processing the second signal.

15. A system for providing input from a keypad and providing lighting to said keypad over an electrical connection comprising:

key detection means for providing a signal over said electrical connection indicative of a key pressed on said keypad;

lighting means for lighting said keypad via said electrical connection; and

multiplexing means for selectively activating said lighting means and said key detection means at a predetermined rate.

The system of Claim 1 wherein said predetermined rate is a rate sufficient to make said lighting means and said keypad detection means appear to be activated simultaneously by said multiplexing means to a user of said keypad.

J 17. The system of Claim 55 further including timer means for establishing said predetermined rate 2/

18. The system of Claim 1 wherein said timer means includes a computer connected to said keypad via a first connection.

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19. The system of Claim 15 wherein said first connection includes a pin contact.

20. The system of Claim 15 wherein said keypad is a keypad on a cellular telephone.

21. The system of Claim 20 wherein said cellular telephone is incorporated into a personal digital assistant.

22. The system of Claim 21 wherein said keypad is located on an exterior portion of a flip of said personal digital assistant.

23. A system for providing bi-directional information over a single connection between a keypad and a signal processing circuit comprising:

first means for selectively providing a high voltage state or a low voltage state on said single connection at a predetermined rate;

second means for transferring a first signal from said computer to said keypad over said connection in response to said high voltage state on said connection; and

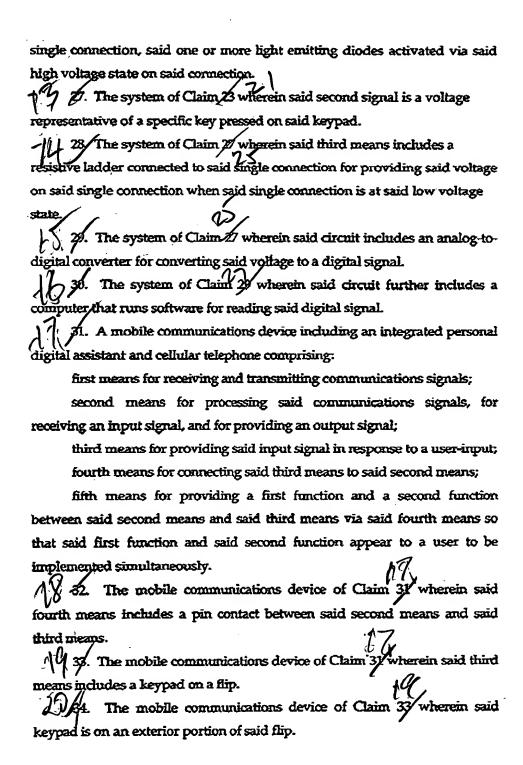
third means for transferring a second signal from said keypad to said circuit over said connection in response to said low voltage state on said connection.

The system of Claim 3 wherein said first means includes a timer connected to a switch that is selectively activated at said predetermined rate by said timer, said switch for selectively bypassing a pull-up resistor to a high voltage source to provide said high voltage state at one end of said pull-up resistor when said pull-up resistor is bypassed and to provide said low voltage state at said one end of said pull-up resistor when said pull-up resistor is not bypassed, said one end of said pull-up resistor connected to said connection.

1 28. The system of Claim 28 wherein said first signal is a keypad lighting signal.

( 29. The system of Claim 25 wherein said second means includes one or more light emitting diodes arranged in a lighting circuit connected to said

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35. The mobile communications device of Claim 34 further including a body for housing said second means.

36. The mobile communications device of Claim 35 wherein said fourth means includes a hinge for physically connecting said flip to said body.

37. The mobile communications device of Claim 34 wherein said first function is a lighting function for providing backlighting to said keypad.

38. The mobile communications device of Claim 34 wherein said second function is a keypad reading function for enabling said second means to read user-input from said keypad.

39. A personal digital assistant comprising:

a keypad mounted on a flip for providing a first input signal;

- a body having a computer for processing said first input signal and providing an output signal in response thereto;
  - a hinge connecting said flip to said body;
- a pin contact between said flip and said body for providing an electrical connection between said flip and said body when said flip is closed; and

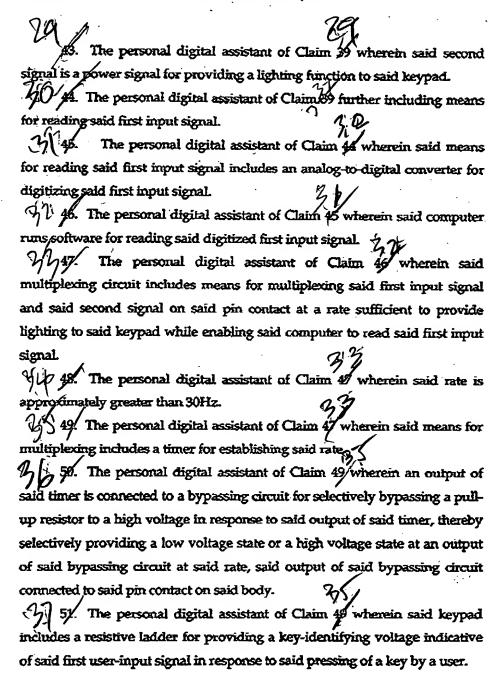
multiplexing circuit for selectively providing said first input signal from said keypad to said body and providing a second signal from said body to said keypad via said electrical connection.

40. The personal digital assistant of Claim 39 wherein said hinge is positioned with respect to said flip and said body so that said keypad is exposed when said flip is closed.

Al. The personal digital assistant of Claim 3 wherein said personal digital assistant includes a cellular telephone.

The personal digital assistant of Claim 39 wherein said body includes a display mounted on an exterior of said body for displaying said output signal.

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52. The personal digital assistant of Claim of wherein an output of said resistive ladder is connected to said pin contact on said flip, thereby providing said voltage indicative of said first user-input at said pin contact.

76. The personal digital assistant of Claim 21 wherein said software includes means for reading said key-identifying voltage when said output of said bypassing circuit is at said low voltage state.

The personal digital assistant of Claim Wherein said keypad includes a lighting circuit connected to said pin contact that is activated when said output of said bypassing circuit is at said high voltage state and deactivated when said output of said bypassing circuit is at said low voltage state.

55. The personal digital assistant of Claim 54 wherein said lighting circuit includes one or more light emitting diodes.

56. A method for providing input from a keypad and providing lighting to said keypad over an electrical connection comprising the steps of:

providing a signal over said electrical connection indicative of a key pressed on said keypad;

lighting said keypad via said electrical connection; and

selectively activating and/or de-activating said step of lighting and said step of providing at a predetermined rate.